VOLUME II
USER'S GUIDE

IMPLAN

Michigan Department of Transportation
Rockwell International
Dunn Engineering Associates

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Disk #56-Detroit
File: IMPLAN

USER'S GUIDE

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Introduction

IMPLAN serves as a software tool for assisting in the development of an Incident Management Plan. IMPLAN targets traffic engineers and planners responsible in their region for formulating and implementing incident management plans.

IMPLAN represents a *shell* for an incident management plan. By inserting site specific information, a user can develop a plan tailored for his or her own area.

In some cases, the "user" may be a Task Force or Working Group assembled to promote improved incident management in a region. In this case, the tool can serve as a catalyst to resolve issues among the participating agencies. Exercise of the tool can become an early "product" for the group.

Development of the IMPLAN software package was supported by the Michigan Department of Transportation as part of the Metro Detroit Early Deployment Project. This project was funded in part by the Federal Highway Administration. Rockwell International was prime contractor. Dunn Engineering Associates, subcontractor, developed the IMPLAN software while Hubbell, Roth and Clark, subcontractor, assisted in generating the site-specific information.

Volume I, the *I-75 Corridor Incident Enhanced Management Plan,* results from exercising the shell for the I-75 Corridor between I-94 and Adams. This document, Volume II, User's Guide, explains how to use the program to develop an Incident Management Plan.

Purpose of **IMPLAN**

IMPLAN will assist the user in developing an incident management plan for a specific area or region.

IMPLAN contains a *generic* incident management plan which consists of:

- generic text which describes incident management, and the reasons for implementing an incident management plan
- a text framework which establishes a generic incident management plan
- an extensive series of tables

The user generates the *site-specific* incident management plan by filling in these tables with information relevant to the specific area or region. The text framework refers to these tables. As a result, when the tables are completed, a site-specific incident management plan is generated.

In most cases, the information required in the tables should be self evident. In certain instances, the user can obtain additional help from the Technical Guidance section of this user's guide.

The user can obtain additional guidance by consulting the default listings described in the following section.

References

For information on incident management which may assist the user in completing the IMPLAN tables, the following references should be consulted:

- Freeway Incident Management Handbook, FHWA-SA-9 l-056, July 199 1, Dunn Engineering Associates

- Framework for Developing Incident Management Systems, WARD 224.1, August 1991, Washington State Transportation Center(TRAC)

- Incident Management, Trucking Research Institute, 1990, Cambridge Systematics, Inc.

Program Overview

To use the program, you should have some basic knowledge of a personal computer and the DOS and Windows operating environment. Some knowledge about Paradox for Windows would also be helpful.

Installation

1. System Requirements

Software:

- Windows 3.1
- Paradox for Windows 4.5

Hardware:

- IBM compatible PC with Intel 386 or higher processor
- 4MbofRAM minimum (6 Mb recommended)
- Hard disk drive and one floppy drive.
- EGA,VGA, or other high-resolution monitors supported by Microsoft Windows.

- Mouse or other Windows pointing device.

2. Installing the Program

If you do not have Windows 3.1 or Paradox for Windows 4.5 installed on your computer, you should do so before you install IMPLAN.

The program should be installed in the DOS environment. Follow these steps:

1) First change your current directory on the hard drive to the working directory (for example, C: \PDOXWIN\WORKING).

2) Insert the IMPLAN program disk into the floppy disk drive.

3) Type A:INSTALL (if your IMPLAN program disk is in drive A)

This will enable the compressed file in the program disk to be loaded onto your working directory.

Setting Up The Program

Load Windows 3.1 to bring the Windows desktop.

1. Editing the Windows "Paradox For Windows" Icon Property

On the Windows desktop, highlight the icon "Paradox for Windows" by pointing the mouse cursor to it and click the left mouse button ONCE (do not double click the mouse, otherwise you will load Paradox for Windows before finishing the set up).

Click "FILE" on the top left corner of the screen.
Click "Properties".

After the prompt "Command Line", enter:

C:\PDOXWIN\PDOXWIN.EXE IMPLAN -q

(this assumes Paradox for Windows is installed in C:\PDOXWIN. If not, make modifications accordingly)

Click the OK button.

2. Setting up the Working Directory

The Working Directory is the directory where you have installed the Incident Management Program.

On the Windows desktop, Double click "Local Settings Utility" icon within the "Paradox for Windows" program group.

After the "Working Directory" prompt, enter the path and name of your working directory. For example, if your working directory is C:\PDOXWIN\WORKING, then simply enter:

C:\PDOXWIN\WORKING

Click the OK button.

The Incident Management Program is ready to **run.**

Running The Program

On the Windows desktop, run the Incident Management Program by double clicking the Icon "Paradox for Windows". Wait for the program to load until the Incident Management Program opening screen appears.

Loading An Incident Management Plan

To edit a plan, press the EDIT PLAN button. A pop-up menu appears with three options:

NEW PLAN: This loads all blank tables allowing the user to essentially start "from scratch".

DEFAULT PLAN: This option loads some of the tables with default entries. These can serve as suggestions or prompts to the user who can analyze which of the entries apply to the specific site.

For example, in choosing goals for an incident management plan, the user can examine the default goals, select those relevant to the specific site, eliminate those irrelevant, or add others not on the default list.

AN EXISTING PLAN: This option allows the user to load a plan that has been saved earlier, from a directory in either the hard drive or **a** floppy disk. This enables the user to work with a number of different plans for different sites.

When this option is chosen, a file browser appears, which enables the user to select an existing plan. The user can search different disk drives and different directories to look for the plans. It should be noted that a plan is saved with the file name *.TXT. However, it is a compressed file rather than a text file.

After a plan is selected, it will be loaded for editing. This can take a little while.

Editing An Incident Management Plan

1. Data Entry Screens

   There are many data entry screens within the Incident Management Program, as shown in Figure 1.

   NOTE: Roadways and agencies can only be defined or modified on the "Define Roadways and Limits" screen and the "Define Agencies" screen. Elsewhere, although roadways and agencies appear in other data entry screens, they cannot be modified. This restriction is established to maintain consistency among data files.

2. Inserting A Record

   Use the mouse to click the row above which you want to insert a record. You can then insert a blank record by clicking the "Insert" button using a mouse or by pressing the "INS" key on your keyboard.

   However, if you simply want to append a new record at the end of your table, you can click the blank record at the end of the table and start entering data for the new record.

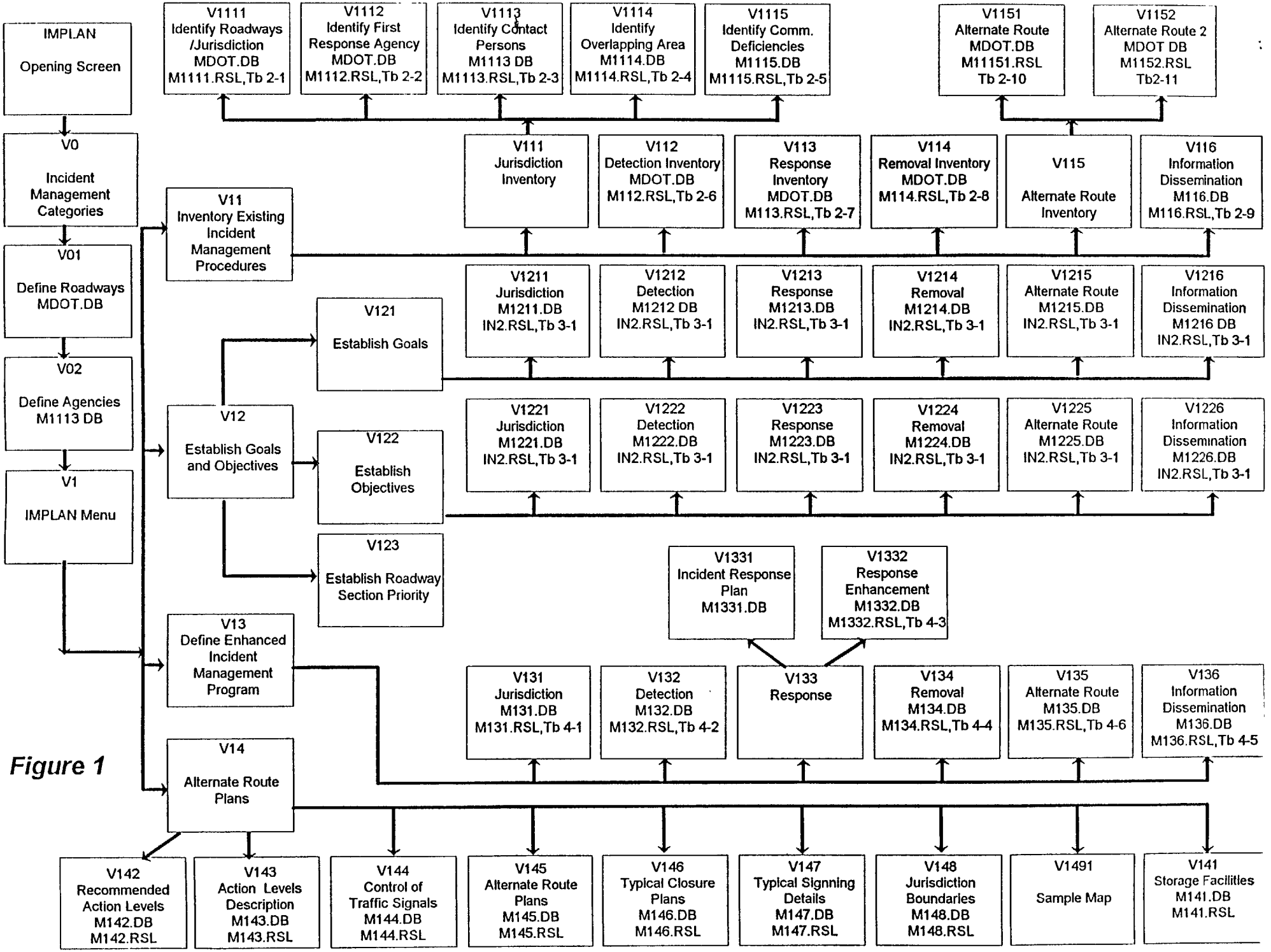
3. Deleting A Record

   Use the mouse to click the record you want to delete. You can then delete the record by clicking the "Delete" button using a mouse or by pressing the "DEL" key on your keyboard.

4. Some Special Data Editing Fields

   Memo field:

   Special attention has to be paid to some memo fields which require a special editing procedure. The following fields are memo fields: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V1
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V1112 Identify First Response Agency MDOT.DB M1112.RSL,Tb 2-2
V1113 Identify Contact Persons M1113 DB M1113.RSL,Tb 2-3
V1114 Identify Overlapping Area M1114.DB M1114.RSL,Tb 2-4
V1115 Identify Comm. Deficiencies M1115.DB M1115.RSL,Tb 2-5
V1151 Alternate Route MDOT.DB M11151.RSL Tb 2-10
V1152 Alternate Route 2 MDOT DB M1152.RSL Tb2-11
V11 Inventory Existing Incident Management Procedures
V111 Jurisdiction Inventory
V112 Detection Inventory MDOT.DB M112.RSL,Tb 2-6
V113 Response Inventory MDOT.DB M113.RSL,Tb 2-7
V114 Removal Inventory MDOT.DB M114.RSL,Tb 2-8
V115 Alternate Route Inventory
V116 Information Dissemination M116.DB M116.RSL,Tb 2-9
V1211 Jurisdiction M1211.DB IN2.RSL,Tb 3-1
V1212 Detection M1212 DB IN2.RSL,Tb 3-1
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V145 Alternate Route Plans M145.DB M145.RSL
V146 Typical Closure Plans M146.DB M146.RSL
V147 Typical Signning Details M147.DB M147.RSL
V148 Jurisdiction Boundaries M148.DB M148.RSL
V1491 Sample Map
V141 Storage Facilities M141.DB M141.RSL

Figure 1

VI115. FSL -- fields "Communications Deficiencies"

V1151. FSL -- fields "Candidate Alternate Route 1" and "Responsible Agency"

V1152. FSL -- fields "Candidate Alternate Route 2" and "Responsible Agency"

V131.FSL -- fields "Enhancements"

V132. FSL -- fields "Enhancements"

V1332.FSL -- fields "Enhancements"

V134. FSL -- fields "Enhancements"

V135. FSL -- fields "Enhancements"

V136. FSL -- fields "Enhancements"

5. Tips

If you made a mistake and want to undo the operation, click "EDIT" on the top of the screen and then click "UNDO".

If you have a lot of data and cannot see all the records on one screen, use the mouse to click the scroll bar on the right of the table to scroll up and down. You can also accomplish this by using the "PgUp" and "PgDn" key on the keyboard.

Saving A Plan

When you are finished editing a plan and come back to the IMPLAN opening screen, you can save the plan in two ways. First, you can press the SAVE PLAN button. Or, when you want

to exit and press the EXIT button, answer "Yes" to save the plan. Either way, you will be asked to provide the name of the plan under which you want the data to be saved. Simply type the name without any file name extension. For example, if you want the plan to be called MYPLAN, just type MYPLAN rather than MYPLAN.TXT. Please note that the plan name should conform to the DOS file name convention, e.g. it should contain a maximum of 8 letters.

Printing The Plan

You can print a Incident Management Plan by clicking the "Print Plan" button on the opening screen. Before you do this, make sure your printer is turned on and ready to print.

Comments and Suggestions

You are welcome to provide your comments and suggestions. Please contact Bob Reiss, telephone (516) 288 2480, fax (516) 288 2544, who will then direct to the programmer.

Alternate Route Plans

Criteria for Designating an Alternate Route

In designating alternate routes for freeway closures, at least the following factors should be considered:

- Proximity of alternate to closed interstate section
- Ease of access to alternate route
- Ease of re-entry to alternate route
- Number of traveled lanes
- Number of signalized intersections
- Number of unprotected left turns
- Number of stop signs
- Type of development (commercial or residential)
- Intensity of development
- Schools
- Hospitals
- Pavement conditions
- Height Restrictions
- Weight Restrictions
- Width Restrictions
- Turning Restrictions (commercial vehicles)
- Grades .
- Available fuel
- Available rest stops
- Available food facilities

Drive the proposed alternate route(s) their entire length to assure they are free of construction and other traffic bottlenecks. Give special attention to maneuvering problems or load restrictions

which trucks may encounter.

Signing the Alternate Route

Temporary detour signs necessary to implement the preplanned alternate route should be kept at facilities located nearby the posting location of the signs. Identify these facilities.

Locations of detour signs should be shown on the alternate route maps. However, additional judgement may be needed in the field.

Locate the temporary detour signs in the following manner:

- Place signs at the point of departure from the Interstate to establish motorist confidence that the detour is signed.

- Place signs at all points where a change of travel direction is necessary to remain on the established alternate route; i.e. at all intersections where a turn is required.

- Along lengthy straight sections, additional confirmation detour signs may be required. Such signs may be especially beneficial where the detour route continues straight through major signalized intersections.

- Where the detour route approaches the point of re-entry to the Interstate, existing permanent signing will normally provide sufficient guidance. However, a detour sign at the re-entry point may be helpful

- Signs will normally be erected on the right side of the roadway. Where left turns are required, the signs may also be placed on the left side if sufficient width is available in a median. At wide intersections, supplemental signs may be needed on both sides for visibility.

- Signs should be placed in advance of locations where turns will be necessary. Care should be taken to avoid misdirecting motorists into nearby streets.

When erecting detour signs, no regulatory, warning or other guide signs should be obstructed from the view of the motorist. Signs should be placed a minimum of two feet from the edge of the roadway on curbed sections of the highway and a minimum of twelve feet from the traveled way in uncurbed sections.

- In heavily congested areas, flags should be placed on the detour signs to attract attention.

- The temporary detour signs should be erected in reverse order starting from the end of the detour to the beginning (opposite to the direction of the flow). However the need to set out the signs quickly may mediate against this general rule. In some cases, the police officers to be stationed in the same area can be given the signs to deploy directly.

- Signs will normally be fastened onto poles or erected on portable temporary sign structures. Signs should be mounted a minimum of five feet over the roadway in rural areas and seven feet over the roadway in urban areas.

Control of Traffic Signals Along Alternate Route

Even with the establishment of pre-planned alternate routes, expect traffic congestion when they are set up. The alternate routes undoubtedly were not designed to carry the volume of traffic diverted from the interstate. However, some mitigation can be obtained by manually controlling the timing of traffic signals along the alternate route. If the signals are computer controlled, this can be accomplished from the Traffic Operations Center. In other areas, the controlling agency must be notified to adjust the signal timing.

Identify the signals along the alternate route, their controlling agencies and the means by which timing can be modified when the alternate route is in effect.

Police officers should be equipped and instructed in operating the signals manually, if the signals have this capability. Traffic on streets crossing the alternate route may be inconvenienced while the alternate route is in progress. Nevertheless, as much green as possible should be granted to the alternate route.

Although traffic can be directed manually, this is best accomplished via manual signal control or alteration of signal timing. This is safer for agency personnel and provides more efficient traffic flow.

Establish Implementation Levels

Depending on incident severity, different levels of alternate routing may be required. Establish in advance these levels and criteria for their implementation.

Dismantling the Alternate Route

When the need for diversion is eliminated, remove all signs and equipment and restore normal operation. Detour signs should be taken up from the beginning to the end of the alternate route. Equipment should be returned to the storage location for its next use. Notify the maintaining agency to return traffic signals to normal operation.